

SECTION 825 INCIDENTAL CONCRETE CONSTRUCTION

825-1 DESCRIPTION

This section consists of the general requirements for the construction of all incidental concrete construction. The provisions of Sections 838, 840, 846, 848, 850, 852, 853, 854, 855, 857 and 858 will prevail over any conflicting requirements of this section.

825-2 FORMS

(A) General

Maintain forms true to the required lines, grades and dimensions. Construct forms with material of such strength and with sufficient rigidity to prevent any appreciable deflection between supports. Provide mortar-tight forms with a fillet at sharp corners when indicated in the plans.

Design clamps, pins, metal spacers, anchorages and other connecting devices to hold the forms rigidly together. Construct or install any metal spacers or anchorages that are required within the forms so that the metal work can be removed to a depth of at least 1" from the exposed surface of the concrete without injury to the surface. The recess thus formed in the concrete shall have a diameter no greater than 1.5 times the depth.

Maintain the shape, strength, rigidity and surface smoothness of forms that are to be re-used at all times. Thoroughly clean all dirt, mortar and foreign material from forms before reusing. Thoroughly coat all inside form surfaces with commercial quality form oil or other equivalent coating before placing concrete.

(B) Wood Forms

Provide forms with a smooth and uniform texture. Make joints between forms tight and even so that no appreciable form marks remain after the forms are removed.

Do not use plywood sheets showing torn grain, worn edges, patches or other defects that impair the texture of concrete surfaces exposed to view.

(C) Metal Forms

Use metal forms of such thickness and rigidity that the forms will remain true to shape. Counter-sink bolt and rivet heads. Use only metal forms that present a smooth surface and line up properly. Keep metal forms free from all foreign matter that will discolor the concrete.

825-3 REINFORCEMENT

Furnish and place reinforcement as shown in the plans and in accordance with Section 425.

825-4 PLACING CONCRETE

Do not place concrete until the foundation, the adequacy of the forms, the placing of reinforcement and other embedded items have been inspected and approved.

Place concrete in daylight unless an approved lighting system is provided.

Remove all debris from the interior of forms in preparation for placing concrete. Moisten earth or base course surfaces on which concrete is to be placed immediately before placing concrete. Do not place concrete on excessively wet or frozen surfaces.

Place concrete in its final position in the forms within the time stipulated in Subarticle 1000-4(E).

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Place concrete to avoid segregation of the materials and the displacement of the reinforcement. Thoroughly work the concrete during placement. Bring mortar against the forms to produce a smooth finish, substantially free from water and air pockets or honeycombs.

Do not place concrete when the air temperature, measured at the location of the concrete operation in the shade away from artificial heat, is below 35°F unless permission is otherwise granted. When such permission is granted, uniformly heat the aggregates and water to a temperature no higher than 150°F. Place the heated concrete at a temperature of at least 55°F and no more than 80°F.

825-5 SLUMP TESTS

Test the slump of the concrete in accordance with Article 420-6.

825-6 FINISHING

(A) General

Provide the type of finish required by the contract directly applicable to the work being constructed.

(B) Ordinary Surface Finish

Remove all form ties or metal spacers to a depth of at least 1" below the surface of the concrete and clean and fill the resulting holes or depressions with grout. Metal devices with exposed cross-sectional area not exceeding approximately 0.05 sq.in. on surfaces permanently in contact with earth fill may be broken off flush with the surface of the concrete.

Remove all fins caused by form joints and other projections. Remove stains and discoloration. Clean all pockets and fill with grout as directed. Thoroughly soak the surface of all concrete with water before the application of a grout repair.

Use grout consisting of one part cement and 2 parts sand. Use cement from the same source as originally incorporated in work. Cure the grout for at least 3 days. After the grout has thoroughly hardened, rub the patch with a carborundum stone as required to match the texture and color of the adjacent concrete.

On surfaces that are to be backfilled or surfaces that are enclosed, the removal of form marks, fins and pockets; the rubbing of grouted areas to uniform color; and the removal of stains and discoloration will not be required.

(C) Sidewalk Finish

Strike off fresh concrete and compact until a layer of mortar is brought to the surface. Finish the surface to grade and cross section with a float, trowel smooth and finish with a broom.

(D) Rubbed Finish

After the ordinary surface finish has been completed, thoroughly wet and rub the entire surface. Use a coarse carborundum stone or other equally good abrasive to bring the surface to a smooth texture and remove all form marks. Carefully stroke the surface with a clean brush to finish the paste formed by rubbing. Alternatively, spread the paste uniformly over the surface and allow it to take a reset. Finish by floating with a canvas, carpet-faced or cork float or rub down with dry burlap.

(E) Float Finish

Finish the surface with a rough carpet float or other suitable device leaving the surface even but distinctly sandy or pebbled in texture.

825-7 REMOVING FORMS

Do not remove forms from freshly placed concrete until it has hardened sufficiently to resist spalling, cracking or any other damage.

825-8 PROTECTION FROM COLD WEATHER

When it is anticipated that the atmospheric temperature will fall below 35°F, protect concrete in accordance with Subarticle 420-7(C). Protect concrete containing fly ash or ground granulated blast furnace slag for at least 7 curing days. Protect all other concrete for at least 3 curing days.

825-9 CURING

Cure concrete in accordance with Subarticle 700-9(B) immediately after finishing operations are completed and surface water has disappeared. Where forms are removed before the expiration of the required curing period, apply the curing compound immediately after the forms are removed.

Cure each mass for 7 curing days. A "curing day" shall be defined as any consecutive 24 hour period, after finishing operations of the mass is completed, when the air temperature adjacent to the mass does not fall below 40°F.

825-10 JOINTS**(A) General**

Construct joints at right angles to the surface of the concrete. Locate joints at right angles to the longitudinal centerline of curb, curb and gutter, gutter, island, median, median barrier and all paved areas, except where different joint locations are called for in the plans.

Where concrete is to be placed adjacent to any existing slab or pavement that has a broken or irregular edge, provide a reasonably vertical edge by sawing.

(B) Grooved Contraction Joints

Form grooved contraction joints by a tool specifically constructed for this purpose or by sawing with an approved concrete saw.

Groove contraction joints to the depth shown in the plans and to a width between 1/4" and 1/2", unless otherwise shown in the plans. If formed by a tool, make a radius of 1/8" at the corners of the adjacent concrete.

(C) Expansion Joints

Fill construction joints with an expansion joint filler. Cut the filler into the shape necessary to fill the joint. Make the filler 1/2" thick unless indicated otherwise in the plans. After the concrete has hardened cut the filler away to a depth of 1/2" to provide space for the joint sealer.

Install an expansion joint adjacent to any existing slab, pavement or structure against which new concrete is placed and at other locations detailed in the plans.

(D) Construction Joints

Construct construction joints as shown in the plans or where otherwise approved.

(E) Sawing Joints

Saw joints after the concrete has hardened sufficiently to be sawed without spalling and raveling but no more than 24 hours after the concrete has been placed.

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(F) Sealing Joints

Seal all contraction and expansion joints, except otherwise specified, before the backfill is placed.

Thoroughly clean the joint to remove all foreign matter. Dry joints before sealing.

Entirely fill joints to within 1/8" to 1/4" of the surface of the concrete with joint sealer. Immediately remove any sealer spilled on the surface of the concrete.

Place joint sealer with equipment meeting the specifications of the manufacturer of the sealer material.

825-11 MEASUREMENT AND PAYMENT

There will be no direct payment for the work covered by this section.

Payment at the contract prices for the various items covered by those sections of the *Standard Specifications* directly applicable to the work being constructed will be full compensation for all work covered by this section.

SECTION 828 TEMPORARY STEEL COVER FOR MASONRY DRAINAGE STRUCTURES

828-1 DESCRIPTION

Install temporary steel plate covers on masonry drainage structures in accordance with the details shown in the plans and as directed.

828-2 MATERIALS

Provide materials that are Grade A36 steel and the size and thickness shown on the detail in the plans.

828-3 MEASUREMENT AND PAYMENT

Temporary Steel Plate Covers for Masonry Drainage Structures will be measured and paid in units of each for the actual number of these items incorporated into the completed and accepted work.

Payment will be made under:

Pay Item	Pay Unit
Temporary Steel Plate Covers for Masonry Drainage Structures	Each

SECTION 830 BRICK MASONRY CONSTRUCTION

830-1 DESCRIPTION

This work consists of the general requirements for all unreinforced brick masonry construction. The requirements of Sections 838, 840 and 858 will prevail over any conflicting requirements of this section.

830-2 CONSTRUCTION METHODS

Construct all concrete footings and all other concrete elements of the structure in accordance with Section 825.

830-3 MORTAR

Machine mix mortar in accordance with Article 1040-8 for at least 90 seconds. Remove and dispose of any mortar that has developed initial set or lost plasticity.